Abstract:

Title of the study:

Profile and Outcome of Patients with Community Acquired Bacteremia among medical admissions at a tertiary care center in South India

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Background: Community acquired bacteremia (CAB) is a leading cause of morbidity and mortality in India. Prior studies on CAB from India have been limited to specific organisms or retrospective data from microbiology laboratories. We conducted this study with a hypothesis that the burden of disease and mortality due to CAB has been underestimated.

Objective: To determine the common aetiologic agents and their antimicrobial susceptibilities, risk factors, sources, clinical outcome and predictors of poor outcome in patients with CAB.

Study design: Prospective cohort study

Methods: Patients admitted to medical wards between June 2014 and May 2015 with positive blood culture drawn within 48 hours of admission were enrolled. Demographic data, risk factors, empiric and definitive antibiotic given, susceptibility profile and outcome were documented. They were followed up for 28 days or until.

Results: A total of 469 bacteremic cases were identified of which 183 (39%) were diagnosed to have CAB. Genito-urinary infections (upper UTI) were the most common source from which CAB occurred. E.coli was the most common bacterial pathogen associated with CAB, of which 64.3% were ESBL producers. The other bacterial pathogens implicated in CAB were *Salmonella enterica spp* (12%), *Staph aureus* (11%), and *Streptococcus pneumonia* (7%). Diabetes mellitus was the most common (60%) co-morbid illness among patients with CAB. Poor outcome with 28 day mortality occurred in 14.5%. Higher Pitts bacteremia score ($p < 0.001$), AIDS (p - 0.003), and elevated alkaline phosphatase (p- 0.016) at admission were independently associated with higher risk of morality among patients with CAB.

Conclusions: Patients admitted with CAB had significant attributable mortality. The most common risk factor for CAB Diabetes Mellitus. Enterobacteriaceae were the most common cause of CAB, originating from upper UTI with a very high rate of ESBL production and resistance to multiple classes of antibiotics. Hence, Carbapenems may be used as the initial empirical antibiotic of choice in patients with Pyelonephritis and bacteremia having features of SIRS.

Key Words: Community acquired bacteremia (CAB), ESBL, Pitts Bacteremia score (PBS), Mortality, and Appropriate Empirical antibiotic therapy.